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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,955

04/26/2007

Haibin Huang

212/864US

1775

23371 7590 09/18/2008  
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EXAMINER

DO, CHAT C

ART UNIT

PAPER NUMBER

2193

MAIL DATE

DELIVERY MODE

09/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,955	<b>Applicant(s)</b> HUANG ET AL.	
	<b>Examiner</b> CHAT C. DO	<b>Art Unit</b> 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03/28/06; 06/28/06; 04/26/07; 06/12/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/28/2006</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the abstract must be on a separate sheet within the range of 50 to 150 words in length. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

The applicant is advised to place the disclosure in appropriate format including proper headers to identify each session.

Appropriate correction is required.

### ***Claim Objections***

4. Claims 2 and 10-11 are objected to because of the following informalities:

Re claim 2, the applicant is advised to rewrite every acronym in claim 2 in full for clarification purposes.

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Re claims 10-11, these claims direct to a computer-readable medium, but the specification does not clearly address what are the computer-readable medium. The examiner considers the computer-readable medium is tangible medium as RAM and ROM for storing. Further, the claims cite a term adapted as "the program is adapted to make a computer perform" but the term should be executed as "the program is executed to make a computer perform" for clarification purposes, Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, this claim is unclear as what are the steps to realize the transformation since there is no specific steps within the claim. Rather, the claim only discloses the properties as "wherein..." For examination purposes, the examiner considers the clause "wherein" as "comprising" and logically considers the following properties are physical steps. Claims 7-11 have the same rejection.

Thus, claims 2-6 and 12-13 are also rejected for being dependent on the rejected base claim 1.

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-13 cite a process, device, and medium for transforming data in accordance with a mathematical algorithm. However, claims 1-13 merely disclose series mental steps/components for BBB without disclosing a practical/physical application. In addition, method claims 1-6 and 12-13 fail to direct to a machine or apparatus and device claims 7 and 9 fail to disclose any specific hardware component to realize the implementation thus they are considered as software per se. Therefore, claims 1-13 are directed to non-statutory subject matter.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Ralf et al. (“Audio Coding based on Integer Transform”).

Re claim 1, Ralf et al. disclose in the article a process for determining a transforming element for a given transformation function, which transformation function comprises a transformation matrix and corresponds to a transformation of a digital signal from the time domain into the frequency domain or vice versa (e.g. by DCT transformation expression in page 2 right column wherein transformation would convert the time data domain to frequency data domain), wherein: the transformation matrix is decomposed into a rotation matrix and an auxiliary matrix (e.g. section "The MDCT" in pages 2-3) which, when multiplied with itself, equals a permutation matrix multiplied with an integer diagonal matrix (e.g. property of the decomposition); the rotation matrix and the auxiliary matrix are each decomposed into a plurality of lifting matrices (e.g. section "The Lifting Scheme" in page 4); the transforming element is determined to comprise of a plurality of lifting stages which correspond to the lifting matrices (e.g. wherein each of the matrix can be decomposed into three Lifting Stages in page 4).

Re claim 2, Ralf et al. further disclose in the article the transformation function is a DCT-I transformation function, DCT-IV transformation function (e.g. section "MDCT by DCT-IV and Givens Rotations" in pages 2-3), DST-I transformation function, DST-IV transformation function, DFT-I transformation function, DFT-IV transformation function, DWT-I transformation function or DWT-IV transformation function.

Re claim 3, Ralf et al. further disclose in the article the lifting matrices are each block-triangular matrices with two invertible integer matrices in one diagonal (e.g. section "The Lifting Scheme" in page 4).

Re claim 4, Ralf et al. further disclose in the article the invertible integer matrices in each lifting matrix are identity matrices or negative identity matrices (e.g. section "The Lifting Scheme" in page 4).

Re claim 5, Ralf et al. further disclose in the article the transforming element comprises five lifting stages (e.g. page 4 wherein the two of the matrix is merged into one).

Re claim 6, Ralf et al. further disclose in the article an audio signal or a video signal is used as the digital signal (e.g. abstract in page 1).

Re claim 7, it is a device claim having similar limitations cited in claim 1. Thus, claim 7 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 8, Ralf et al. disclose in the article a method for transforming a digital signal from the time domain into the frequency domain or vice versa using a transforming element (e.g. by DCT transformation expression in page 2 right column wherein transformation would convert the time data domain to frequency data domain), wherein: the transforming element corresponds to a given transformation function (e.g. section "The Modified DCT" in page 2), which transformation function comprises a transformation matrix wherein the transforming element is determined by a process comprising decomposing the transformation matrix into a rotation matrix and an auxiliary matrix (e.g. section "The MDCT" in pages 2-3) which, when multiplied with itself, equals a permutation matrix multiplied with an integer diagonal matrix (e.g. property of the decomposition); decomposing the rotation matrix and the auxiliary matrix each into a

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plurality of lifting matrices (e.g. section “The Lifting Scheme” in page 4); determining the transforming element to comprise of a plurality of lifting stages which correspond to the lifting matrices (e.g. wherein each of the matrix can be decomposed into three Lifting Stages in page 4); each lifting stage comprises the processing of sub-blocks of the digital signal by an auxiliary transformation and by a rounding unit (e.g. pages 3-4).

Re claim 9, it is a device claim having similar limitations cited in claim 8. Thus, claim 9 is also rejected under the same rationale as cited in the rejection of rejected claim 8.

Re claim 10, it is a computer readable medium claim having similar limitations cited in claim 1. Thus, claim 10 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 11, it is a computer readable medium claim having similar limitations cited in claim 8. Thus, claim 11 is also rejected under the same rationale as cited in the rejection of rejected claim 8.

Re claim 12, it has similar limitations cited in claim 3. Thus, claim 12 is also rejected under the same rationale as cited in the rejection of rejected claim 3.

Re claim 13, it has similar limitations cited in claim 4. Thus, claim 13 is also rejected under the same rationale as cited in the rejection of rejected claim 4.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



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- a. U.S. Patent No. 2003/0078953
- b. U.S. Patent No. 7,218,789
- c. U.S. Patent No. 7,284,026
- d. U.S. Patent No. 5,031,038
- e. U.S. Patent No. RE40081
- f. U.S. Patent No. 5,812,219
- g. U.S. Patent No. 5,339,265
- h. U.S. Patent No. 6,421,464
- i. U.S. Patent No. 6,324,560

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAT C. DO whose telephone number is (571)272-3721. The examiner can normally be reached on Tue-Fri 9:00AM to 7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chat C. Do/  
Primary Examiner, Art Unit 2193

September 10, 2008